HIB-GA 27
December 1957
Volume 4 : 27

E K I S T I C S

HOUSING & PLANNING ABSTRACTS

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Published for private circulation by
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Dymaxion map on cover by Buckminster Fuller, Patent 2393676

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EDITORIAL

In this third issue of EKISTICS we again present abstracts and extracts for those interested in housing and planning in their international perspective, and with primary focus on the warm climates.

Housing: Probably the most generally interesting abstract in this section is a description of Israel's much discussed "Savings for Homes" plan, which shows one method of handling the problem of financing housing. Further notes on Israel's economy are in the "General" section from an United Nations document. Other noteworthy items are René Eyheralde's system of "Developmental Design" for South American house construction which was previously alluded to in No. HIB-GA 5 of this bulletin and a review of the uses of limestone prepared by Great Britain's Department of Scientific and Industrial Research.

Planning: As promised in the November issue, we have included extensive abstracts of three papers given at the Town and Country Planning Summer School in Oxford, England late this summer. These include Page's significant approach to "The influence of Climate on Town Planning." One of the other papers (by Hudson) stresses the importance of administrative cooperation in achieving useful results. The third (by Dyer), criticizes the direct application of British standards in Africa. This is also the theme of comments made by Dr. Doxiadis at the first regional meeting of the International Federation of Housing and Town Planning in New Delhi. The proceedings of this meeting, which was held in 1954, have just been published in India. We have also included an abstract of their session on the Rural Configuration discussed. This can be compared with the Training for Community Development in Ghana described by Scott and Hodge.

Brazil's ambitious new capital project is briefly discribed by Szulc.

General: Items of less specific interest include some notes from A.J. Meyer seminar discussions at Harvard University on the work of the Development Board in Iraq which relates closely to much of the preliminary report by United Nations, Economic and Social Council on Industrialization in Egypt, Israel and Turkey.

EKISTICS is compiled by Yvette and Lawrence Mann under the direction of Prof. J. Tyrwhitt. Enquiries or comments should be addressed to 77 Trowbridge Street, Cambridge, Massachusetts, USA.

NOTE: The lettering at the top of each page refers to Doxiadis Associates system of classification. The figures below each title refer to the Universal Decimal Classification.

HOUSING

E.N.S.T.

Eyheralde, René, F. DEVELOPMENTAL DESIGN IN HOUSING. Inter American Housing Center, Bogotá, Colombia, 1955. (Technical Series No. 1) 98 p. (Illus.)
721.185 (8)

1. This publication appeared first in Spanish in 1953 and has been translated by César Garcés with drawings by Luz Amorocho. Developmental Design (called Desarrollo Progresivo in Spanish) "can best be considered as a contribution toward rationalizing, systematizing and popularizing the design and construction procedures that are in actual use by the most advanced professional firms." It was developed during Mr. Eyheralde's association with Howard T. Fisher at CINVA (Inter American Housing Center) in a post-graduate training course. As an outstanding student, Mr. Eyheralde was financed on a study tour of the United States and Canada, during which he continued the evolution of these ideas, as well as his association with Mr. Fisher. Mr. Eyheralde is a Chilean architect experienced in dealing with the problems of low-cost housing, and he has directed this publication to aid those involved in such work.

2. Housing needs, one of the most serious problems of our time, is the result of a series of complex factors; and should not be considered as due simply to population growth. Other significant elements are:

Socio-economic factors: social legislation, historic living standards, a country's economic development, etc.

Technological factors: means of physical planning, construction methods, production of building materials, labor efficiency.

3. Lowering the cost of housing construction without at the same time lowering the minimum standards of quality should be a major goal. In attempting this, one must consider cost as being determined by:

Direct factors: labor, design, building techniques and organizations of the work.

Indirect factors: Land cost, interest rates, taxes, codes, regulations, volume of construction and profits.

The role of a coordinative houser is outlined. He must have a broad knowledge of his problem for a comprehensive attack on costs. The accumulation of small savings in sum will be important.

4. An architectural plan, especially for a large-scale housing project, demands a thorough study of the details of the scheme and consideration of all problems in the design. In order to eliminate complications and difficulties arising on the job later, the two-dimensional process of drawing plans to express ideas is used. Even better, of course, is the three-dimensional method for simulating actual conditions. And it is around this principle that the method of Developmental Design procedes progressively to develop standards for low-cost housing.

5. "Progressive Development" (literal translation of the Spanish expression of the concept) was chosen to express this three-dimensional procedure.

> "The design ideas are systematically improved through development, even those ideas concerned with the most minute details of the project under study. Such improvement is achieved through progressive stages, each

Eyheralde, René. DEVELOPMENTAL DESIGN IN HOUSING.

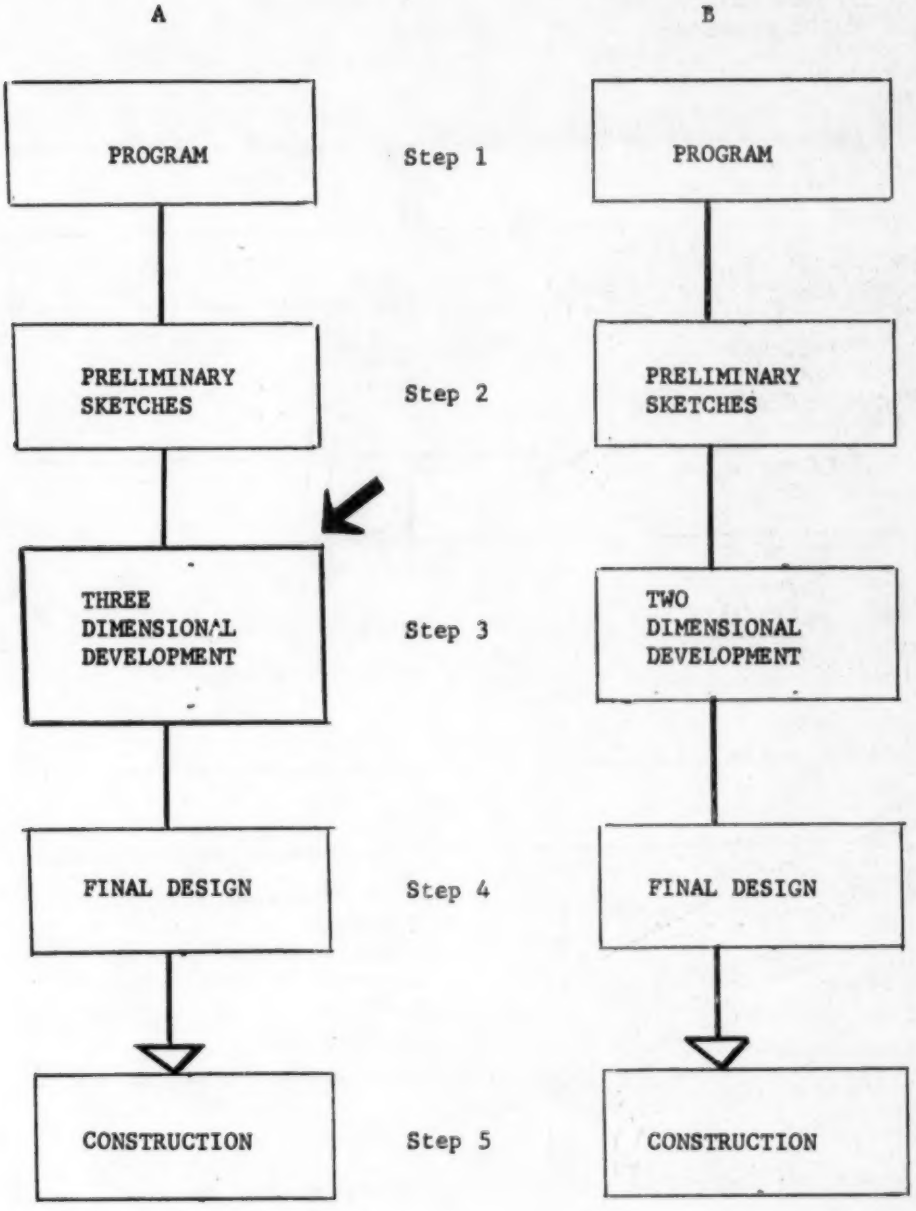


Figure 4 - Diagram indicating the difference between the "Developmental Design" process (A) and the design process commonly used (B). In (A), Step 3 has more importance and involves more time.

Eyheralde, René. DEVELOPMENTAL DESIGN IN HOUSING.

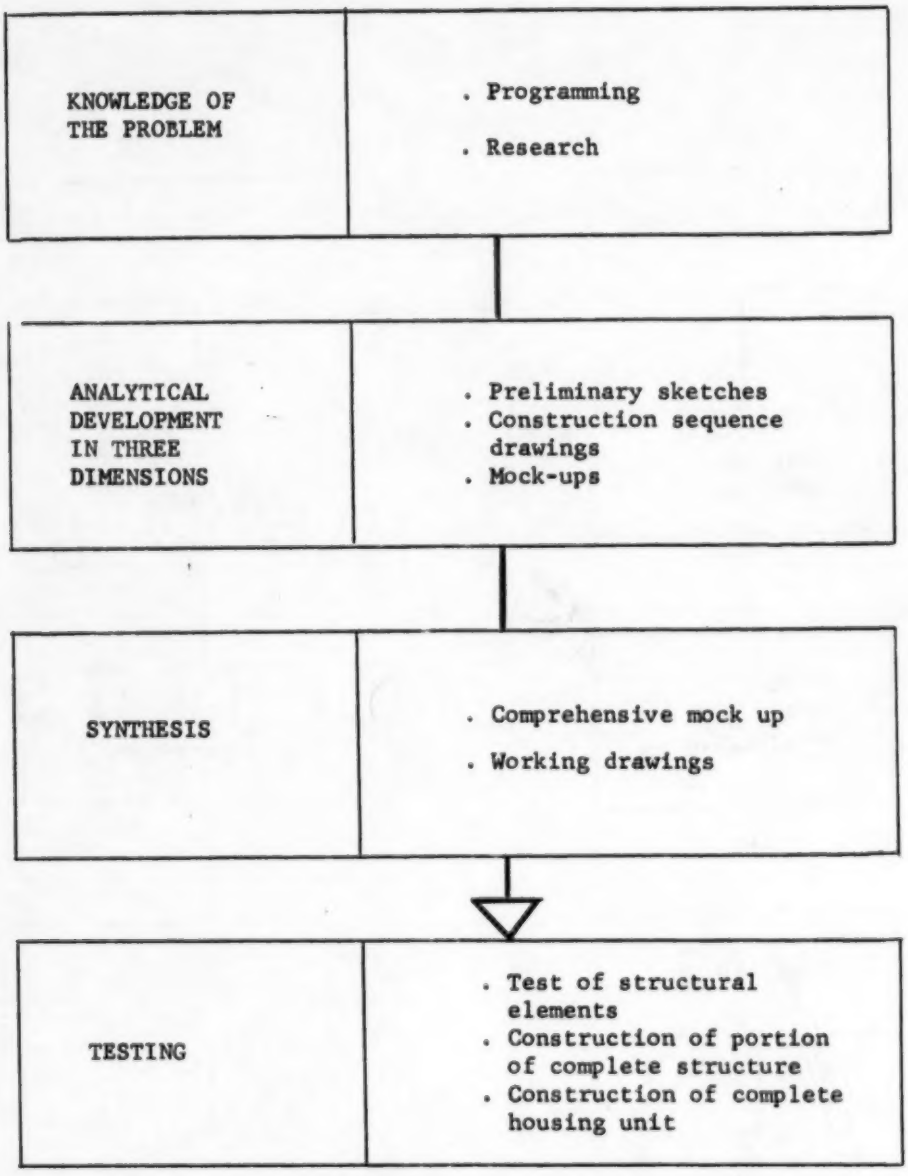


Figure 78 - Diagram indicating steps of the "Developmental Design" process.

an improvement on its predecessor, until an acceptable standard of quality is reached. This progress involves research in three-dimensions, utilizing models and mock-ups that simulate with a high degree of realism the various aspects of the study problem."

6. An example which well expresses the need for such methodology was taken from a speech to the American Congress of Architects (1952 in Mexico City) by Mr. Howard T. Fisher:

"Let us think in terms of a project of 500 units. If each one of these units had 6 windows, the project will require 3000 openings with their corresponding windows, lintels, jambs, sills, locks, etc. The usual method in our profession is work in the office with a two-dimensional design, select materials from Sweet's Catalogue, and draw the final result on paper..."

"In the above example, it would certainly be worthwhile to build one typical window entirely and in three-dimensions and analyze the problems implied in its erection in a portion of wall. It would be even better to follow a developmental process of study and analysis to improve the element until obtaining the best possible product for reproducing it three thousand times."

"No one would think of buying three thousand typewriters... without first obtaining a sample. Nevertheless in our profession we frequently buy thousand of parts or combinations of products and building materials, without previously inspecting samples of them. This is true in spite of the fact that large sums of money are involved and that our correct decisions may mean success or failure for the project during the many years of its life."

7. The cost of housing will be affected by such Developmental Design through increased efficiency of design from careful and detailed study based on preliminary drawings. These drawings will evolve into the final plans in which all aspects of the problem will have been dealt with. Also superfluous elements, which might otherwise pass unnoticed, can be eliminated. The basis for clear and precise specifications will be established during the process. Building materials can be improved as to form and proportion through the research and thus also aid the building industry of developing countries. Construction techniques can be subjected to a detailed analysis of human and mechanical means of erection and material assembly.

8. The procedure of Developmental Design consists of four stages, each with its component procedures. These are:

a. Data and Background of the Design Problem (Programming, investigation)
b. Analytic three-dimensional Development (Preliminary sketches, sketches of sequence, mock-ups and models)
c. Synthesis of the Solution (Comprehensive mock-up, working drawings)
d. Testing (Testing of structural elements, building a part of the Structure, building of the complete structure.)

In application it is important to "maintain the spirit of the method and a general logical sequence."

E.F.N.S.

Great Britain, Department of Scientific and Industrial Research, Colonial Building Notes. LIMESTONE AND LIME FOR BUILDING PURPOSES. No. 47. August 1957. (59416) pp. 1-14. Illustrations.
691.215.1 (100)

1. This is an investigation of the availability, properties and possible uses of limestone and lime in housing and other building. Considerable detail is given to the production, relative advantages and building techniques involved in the use of this material.

2. Limestone, which occurs as mountain limestone, oolitic limestone, marble chalk, coral, dolomite or dolomitic limestone, is one of the most abundant minerals in the world. Calcium carbonate is found in all forms, magnesium carbonate in the dolomite and dolomitic limestones.

3. For many centuries limestone has been used in building. Some famous ones, such as the Palace of Westminster, used an Anston stone, a dolomitic limestone. In the Mediterranean region, limestone is still today a predominant building material. In Malta, the Mdina Cathedral was built in 1697 of soft globegerian limestone and a harder coralline limestone. Today these materials are used for walling and as roof and floor slabs. In Zanzibar and along the East African coast, coral-rock is used as rubble masonry, in block form at Mombasa, and also in the West Indies. In Bermuda roofing slates are made of thin sawn slabs of coral-rock embedded in a thick lime mortar, covered with a cement slurry and then lime-washed.

4. Limestone, crushed, is used as an aggregate for concrete. The tests at the Building Research Station have shown that good concrete can be made if there is no excess of fine dust, and at normal concrete proportions limestone concrete may have only half the thermal movement of a sand-gravel concrete. Concrete made with crushed coral-rock has the disavantage of being porous. This is not too serious in normal blockwork, but for reinforced concrete the porosity may be too high unless special care is taken. Also steel may corrode in the presence of lime and sea water.

5. Limestone chippings can be used for different purposes: decoration for dressed concrete, marble for terrazzo slabs and tiles, protective topping to bituminous and asphaltic roofs. They have the advantage of reducing the actinic effects of the sun's rays and to reflect a high proportion of the total radiation. Another advantage is the tendency for exposed limestone chippings to remain clear. Ground limestone is used as a filler in mastic asphalt. Finally limestone is the major raw material used in the manufacture of lime and portland and aluminous cement.

6. The production of lime varies with location or type. The winning of the raw material may vary from quarrying to simple manual extraction from limestone cliffs, as along the East African coast. Transportation is usually held to the minimum by close location of kilns, and crushing methods depend on the type of kiln used. Kilns are comparatively cheap to build and can operate with a variety of fuels: coal (Malta), charcoal (Uganda), oil (Cyprus) wood (Zanzibar), or coal gas (United Kingdom); but they are not very efficient thermally. Thus, when the market will justify it, a continuously-operated kiln should be employed. A rotary kiln has been used at Abadan, Persia to calcinate sea shells at 900°C. The nature and extent of slaking varies with temperatures and type of limestone used.

Great Britain. Department of Scientific... LIMESTONE AND LIME FOR BUILDING PURPOSES.

Fig. 3. Bermuda. Coral-rock is sawn by hand into thin slabs for use as roofing slates.

Fig. 2. Zanzibar. Coral-rock is used as random rubble in a lime: sand: clay mortar. Walls are often 12-15 in. thick.

Fig. 4. Bermuda. Coral-rock slates being laid in thick lime mortar. They are afterwards covered with a cement slurry and then lime-washed.

Great Britain. Department of Scientific... LIMESTONE AND LIME FOR BUILDING PURPOSES.

Fig. 5. Lime-burning, Zanzibar. A primitive lime 'kiln' consisting of coral-rock piled on top of 6-8 in. diameter logs. Such a method is wasteful of fuel.

Fig. 6. Lime-burning, Malta. A vertical continuous kiln. Limestone and coal are fed in at the top and calcined lime removed at the bottom.

Fig. 8. Northern Nigeria. Decorative lime-plaster on an earth building.

Great Britain, Department of Scientific and Industrial Research... LIMESTONE AND LIME FOR BUILDING PURPOSES -2

7. The properties of lime are discussed in terms of strength, plasticity, soundness, shrinkage, and durability. All limes develop strength more slowly and to a lesser ultimate degree than portland cement, but this can be of value. Added to a cement-sand mix, lime is said to impart a plasticity or "workability;" but this varies with the kind of lime used. (Non-hydraulic limes slaked with excess water work well.) Soundness of limes is affected by late hydration under highly variable conditions, but this is not usually structurally significant. Cracking and surface crazing is due to the natural shrinkage of limes. The durability of limes shows well in moisture and drying conditions, but acid attack by sulphur gases in industrial areas can be severe.

8. Uses of limes in internal plastering are centuries old. Usually several coats are used, with the addition of quick setting agents. Pozzolana-lime mixes, not cementitious in themselves, combine with lime to form a successful product.

9. Soil stabilization, where earth is used as a building material, is greatly aided by non-hydraulic limes in some pozzolanic soils. Hydraulic limes directly increase the strength of non-pozzolanic soils. Dimensional stability of many clay soils is improved by lime additions.

10. Sand lime bricks, made from silica sand and hydrated lime with enough water to enable moulding under pressure (subjected to steam), have good light reflection properties and have little tendency to effloresce. But a high capital cost and exacting conditions and techniques are required.

11. Lime in cement (up to 10% by weight) has been used in America to improve workability with some loss in strength. In Kenya a small proportion of hydrated lime was used in 'Rondavel' housing.

12 Lime washes have decorative advantages, preserve exposed surface from weather and reflect solar radiation falling on walls and roofs. The rise in building temperature is restricted. Many mixtures have been used to improve durability, and hydraulic lime is found best in this regard.

E.P

Housing and Home Finance Agency. International Housing Service.
ISRAEL'S SAVINGS-FOR-HOMES PLAN. (Ideas and Methods Exchange, No. 44) April, 1957. 5 p.
333.073.512.7 (56)

1. This report was prepared by Harold Robinson, former ICA Housing Adviser to Israel. It outlines a scheme for providing housing to working class families in a country where there is no new rental housing. The following is a partial extract.

2. "New rental housing is nonexistent in Israel. Home ownership, therefore, is a necessity. Yet, loans on home mortgages from private sources are virtually unknown in Israel. As a result, prospective home owners must be endowed with the full purchase price of a new home or fall within one of several categories for Government assistance, such as: new immigrants who are provided housing on a rent-sale basis; maabarot dwellers (maabarot is the Hebrew word for villages of temporary tin and frame covered canvas huts) who can obtain housing if they can make a substantial down payment; middle income families who can take advantage of the Government's new "Savings-for-Homes" plan.

3. The plan is, in essence, a Government operated nation-wide savings and loan institution coupled with a drawing of lot to determine who would be eligible for a house and loan in a particular year. The Government acts as the builder-developer using three separate house types. Under the plan some 50,000 new dwelling units will be constructed over a period of ten years using the savings of those who participate in the project. Title to the land itself normally remains with the Government. It is made available under a long term lease.

4. Specifically, the Savings-for-Homes plan calls for a down payment at the time of the participant's registration. Registration down payments range from 9% to 15% of estimated construction cost. Land is Government owned or controlled and is not included in the cost of construction. The down payment at time of registration for a dwelling unit estimated at $2,900 is $280; for one costing $3,500, $350; and for a $4,000 unit, $550. Thereafter, monthly payments into the savings account are the same for everyone, that is, $15.00.

5. Each year lots are drawn by qualified participants to determine who shall obtain a unit constructed during that year. To qualify, a participant's registration payment and monthly savings must equal 25% of the estimated construction cost. He may at any time accelerate his payments to 75% of construction cost and be entitled to a unit outside the lottery. Assuming he is successful in the lottery he will be entitled to a Government mortgage bearing interest at 6% per annum and probably running for 20 years. Government mortgages are specified in the following amounts:

Estimated Cost	Amount of Mortgage	Percentage of Cost
$2,900	$1,100	38
3,500	1,100	31
4,000	1,000	25

6. In addition to the Government mortgage loan the successful "winner" is entitled to a loan from the building contractor (construction firm engaged to build housing for the Government). This loan also bears interest at 6%. In each case the contractor's loan is fixed at $390. It is presumed that the contractor thus defers receipt of a least part of his profit.

7. Based on the estimated cost, total mortgage loans to the prospective buyer from Government and contractor are available as follows:

Estimated Cost	Total Loan	Percentage of Cost
$2,900	$1,490	53
3,500	1,490	44
4,000	1,390	35

8. The difference between the construction cost and the total credit (registration down payment, monthly savings, and mortgage loans from the Government and the contractor) must be paid at the time of transfer of title.

9. As an added inducement to participate in the plan, a participant will receive 4% interest annually on his savings and be permitted to withdraw his deposits plus accrued interest after proper notification of his desire to withdraw.

10. To protect, in part, against fear of inflation a scheme has been worked out to tie savings to a cost of construction index. Each year costs will be reestimated on the basis of construction in a designated community. Participants will be given the benefit ("assured value") of any increase in construction cost in proportion to their paid-in savings so that any increase in construction cost will be reflected only in part on the final cost to the participant.

11. To sum it up, the cost of the dwelling unit is supplied from the following sources:

a. Initial registration deposit--buyer
b. Monthly payments--buyer
c. Credit for assured value--Government promise
d. Government mortgage loan--Government
e. Supplementary contractor's loan--Contractor
f. Interest on deposits--paid by Government
g. Amount paid on transfer of title--buyer
h. State owned or controlled land--Government
i. No profit ot promoter (builder-developer)--Government assumes risk of development.

12. Basically, the plan amounts to the establishment of a banking institution into which small wage earners can funnel interest-bearing savings which are partially protected against inflation. They also are assured of a mortgage loan when their savings reach the amount required for the down payment on a home of their own. The Government acts both as banker and builder rather than as guarantor of mortgages, as in the United States.

13. In Israel private enterprize is also very much in the picture. The Government uses private banks as servicing agents; private building contractors do the actual construction and make supplementary loans; and title to the dwelling unit is vested in the home owner, so that the Government's ultimate position is merely that of a lender.

14. The plan is open to maaborot dwellers, inhabitants of slum areas, over-crowded apartment dwellers, prospective immigrants, persons indicating a willingness to take up residence in new development areas, and agricultural settlers. An interesting commentary on Israeli life is that spinsters and bachelors living with parents or in rented rooms as lodgers may join the plan but become eligible for a house only upon marriage. Also, parents who desire to provide housing for children may start a saving fund for them with the understanding that the children's rights mature only upon marriage.

C.E.P.

Housing and Home Finance Agency. International Housing Service. NATIVE HOUSING, DURBAN, SOUTH AFRICA. News Notes, June - July 1957. pp. 3-4.
728.226 (68)

1. Source cited is Foreign Service Dispatch, Durban. April 25, 1957. The following is reproducedin full.

2. "Work is underway on the Duffs Road Native housing project about ten miles from central Durban, South Africa, which will eventually provide about 16,000 family and hostel dwellings units for an estimated 120,000 persons.

3. The scheme is expected to cost approximately 9 million (U.S. $25.2 million). This figure includes cost of land, services, community facilities, and the dwellings. The City Engineer's office hopes that the first householders can take up residence in about one year and that by the end of 1958 houses will be erected at the rate of 80 per week.

4. Schemes of this sort are financed by long-term loans to municipalities from National Housing Funds at the going rate of interest on Government bonds (roughly 5% at present). The loan is redeemed through rents and home payments collected from occupants. A standard four-room house at Duffs Road will cost about 200 pounds.

5. Native building workers will be employed exclusively on this projects. Other native housing projects previously completed have provided a nucleus of trained men who will be used to instruct new recruits. The Duffs Road scheme will consist of units of simple, nearly identical designs erected by 'assembly line' techniques."

PLANNING

D.O.V.W.X.

Dyer, H. Thornley. Development of PLANNING STANDARDS OVERSEAS. Town and Country Planning Summer School (Overseas Section). Oxford, England. September 7-11, 1957.

1. The following abstract is taken from a talk given by Mr. Dyer at the Summer School. The speaker's experience was gained in Kenya, where he has been Town Planning Adviser to the Government for the past twelve years. This article was announced in HIB-GA 26, November issue, page 91.

2. Even the very discussion of planning standards is premature, since the conditions and problems of planning overseas must first be understood. The speaker is quite certain that "British standards and town planning theory, just do not fit the conditions experienced in one overseas territory, let alone the Colonies generally." In Kenya, with its racial and religious complexity, social structure of extremes, and an evolving government, English standards have proved of "singularly little value." Separate training for overseas planners is called for.

3. Since social change has been much more abrupt in the colonies than in Britain and other European countries (a 'revolution rather than an evolution'), it is necessary to go back to first principles in the development of standards. Residential and recreation standards are particularly apt to be meaningless. Faced with vast work and very limited resources, the overseas planner must "streamline his approach... letting much of the detail take care of itself in order to safeguard the main planning lines and avoid major mistakes."

4. Survey activity in most overseas planning offices is confined to outline investigations on a day-to-day basis, because of the personnel shortage. Moreover, the basic survey data taken for granted in England is often nonexistent or very difficult to extract. And it is the lack of this data which gives rise to the greatest planning mistakes, such as the unsound siting of towns and rural industries leading to expensive foundations and poor drainage. Multi-racialism, social change and a rapid rate of expansion all serve to complicate and outdate surveys almost before they are completed.

5. Regional planning covering the potential economic development, agriculture, afforestation, mining, fisheries and tourism as well as the system of local government, together with schemes for irrigation, hydro-electric power, communications and water supply should be the basis for any land settlement pattern. This will demand clear-cut classification of urban centers according to their respective functions. In order to avoid under-planning for the larger cities and the creation of dead roads and sewers in over-planning the small towns, the following pattern of classification is evolving in East Africa:

a.	Ports and capital cities--ultimate population....	100,000-500,000
b.	Provincial administrative centres	20,000- 50,000
c.	District administrative centres	5,000- 10,000
d.	Small district townships	1,000- 2,500
e.	Native land units ..... Divisional Centre	5,000- 10,000
	Location centre	4,000
	Sub-location centre	3,500

Dyer, H. Thornley. Development of PLANNING STANDARDS OVERSEAS. -2

6. Over-concentration can be avoided in cities where the Crown retains ownership of land in the central areas of cities. One possible idea, not yet tried in Africa, is the separate shopping precinct. The variation in demand for office space between Nairobi and the provincial centres is discussed. Several basic questions need to be answered before standards for city centres can be set up.

7. In Kenya residential standards are essentially racial standards, but they are rapidly changing. Class distinctions play some part, but the uniraciality of schools, religious buildings and clubs indicates that neighbourhoods remain homogeneous in this regard. European housing is changing rapidly in construction and lot size, and planning standards must recognize this trend together with the economic forces behind it. Asian housing is usually multi-family, but here too a change is taking place toward smaller units. African housing is very much an economic question as the abrupt change from tribal life to crowded urban settlement is made with surprising ease. The neighbourhood unit principle is said to be "as valid for an African as for any other community." But several directions for further research are indicated here.

8. Densities are the subject of considerable controversy. In South Africa single houses are built at a density of about eight per net acre, as this has been found to be the most economical. Hong Kong and Singapore, on the other hand, have very high densities because of the land costs; and these appear not to be particularly injurious to health. In Nairobi and Mombasa it has been found that where foundations are expensive two and three-storey houses are slightly cheaper in building costs and show a 50% saving in roads, sewers, water and other estate services. Densities here are about 100 persons per gross residential acre.

9. Road standards tend to give generous widths in overseas areas. This is partly due to low standards of construction and the width required for open roadside storm drains, and partly to the cut and fill involved on sidelong sloping ground. Residential roads are classified:

a. Cul de sac or minor (600 ft. maximum length)
b. Minor roads exceeding 600 feet
c. Major residential roads

Open roadside drains increase road reserve width by 10 feet, and tree planting within the road reserve adds 20 feet. (So tree planting is encouraged on house lots.) Minimum widths for fully made up roads to municipal standards are 30,40 and 60 feet for the three categories. For country-type construction with open drains these become 40, 50 and 60 feet. Carriage way widths in the categories are 16, 22 and 23 feet. Paths 15 feet wide are being adopted in native villages. While these are for footpath access to houses, they can also serve vehicles if required.

D.O.W.

Hudson, R.S. Basic Problems of URBAN ADMINISTRATION IN AFRICA. Town and Country Planning Summer School (Overseas Section) Oxford, England. September 7-11, 1957
711.4 (6)

1. The following abstract is taken from a speech given by Mr. Hudson as Part 1 of the "Urbanization--Problems and Policies." The speaker is presently attached to the Colonial Office, African Studies Branch and formerly held important administrative positions in Northern Rhodesia. Much of the material in the discussion comes from the speaker's association with the East Africa Royal Commission. We announced this article in HIB-GA 26, November issue, page 91.

2. The business of town planning has four main parties:

a. The planner himself with all his technical skill and experience;
b. The local authority, whose cooperation and understanding is essential;
c. The administrator, who is especially concerned with the needs and prejudices of the people who are to live in the towns;
d. The people themselves, who are likely to have their own ideas about what sort of towns and what sort of house they want.

The best results in African planning are not achieved because of lack of cooperation, advice-exchange, and understanding on the part of these four parties.

3. Different regions of Africa present different problems for urban development. One contrast is between the European towns of East and Central Africa on one hand and the indigenous, traditional towns of West Africa with their complex vested interest and land tenure system. But the main tendency throughout appears to be the formation of local government and administered townships. For this a body of informed, public-spirited people for local councils is needed; and it is important that individual council members do not interfere with the work of their officials unduly. In the old West African towns, it must be assured that the traditional as well as the elected leaders are recognized.

4. The problem of the migrant labourer and temporary sojourner in town is important. Coming from the rural regions, these migrants earn their living for a time through casual jobs (or sometimes petty crime) before returning to the security of their homes. To deal with these conditions, administrative control of the urban population is needed first in the towns through chiefs, headmen and elders; and second, it is needed through a district officer or other appointed persons whom the African population will trust and bring their troubles to. The present form of English local government is held to be too impersonal for the African. It needs to be supplemented by some kind of efficient administrative arrangement familiar to the people; one which will give them an experienced guide and friend. This need is especially great in East and Central Africa where most urban authorities are usually Europeans.

5. An economic point is next raised, following the lines of study of the East Africa Royal Commission. In almost every town of the world, it is said, "there is a section of the community which cannot afford to house itself at the standard locally demanded by Health Authorities, Administrations and public." Either squatting on fringes of towns or the provision of subsidised housing have been necessary consequences. Squatting means the creation of new slums, and

subsidized housing is becoming too expensive to be provided in fast-growing African cities. Land tenure is discussed as an important facet of the problem--viewing the function of planning as 'the co-ordination of all economic activities, whether public or private connected with the development of land in the best interests of the territory as a whole' (After Stevens). In the New Towns the English system of land tenure holds, and its pricing system and high standards force squatting. In the older towns, a system of tenure by individuals, families or groups brings about uncertainty, litigation, and difficulty in control due to lack of registration. Slums are found within the towns themselves in this situation.

6. To deal with these matters, Oram (in the Royal Commission Report) has described the following as requirements.

a. The promotion of economic development by providing clear titles to and a worthwhile interest in holdings.

b. The speedy and efficient administration of transfers in land in order that the best economic use can be made of it. This involves adjudication and registration of title.

c. The prevention of the misuse of land, which includes the need to control sub-division and sub-letting.

The standards for length of lease to be allowed within each zone still needs discussion.

7. "How can the growing towns be developed to an adequate and rising standard within the means of the people and their governments?" This is the big question. A suggested answer is taken from Chapter 19 of the Report of the East Africa Royal Commission. Zoning of urban areas, including the area surrounding the statutory township, is indicated along the following lines:

Zone 'Z': a low minimum standard approximating that common in rural areas, but with planning and minimum health requirements for urban (or peri-urban) conditions.

Zone 'Y': a higher set of standards.

Zone 'X': a 'Park Lane' set of standards.

No restrictions would be made by race, and freedom of movement between zones would depend only on economic circumstances and social inclination. Subsidies would cease (assuming adequate minimum wage); slums would be brought under health, planning and administrative control; loans and basic services would be public; and rental housing would come partly from rooms to let in African-owned homes, which are expected to increase in number. This latter could provide income for the aged and infirm. It is felt that "there is much more likelihood of establishing a contented community in comparatively mean cottages in a Zone Z than in the dismal rows and crescents of the model housing estages which conform to all the best criteria of model houses but lack soul."

D.G.K.O.

International Federation for Housing and Town Planning. Proceedings of the South East Asia Regional Conference. THE RURAL CONFIGURATION SESSION. February 1-7, 1954, New Delhi. Government of India Press, Nasik Road, 1957. pp. 197-275.
711.3 (540)

1. The session on Rural Configuration was the second of three sessions presented in the conference report. The main concern was with the role of villages in the configuration and with the function of parts of the villages. We have elaborated the "General Report" on certain points of interest.

2. Papers prepared for the session were:

G.B. Deolalikar, New Delhi.	Rural Configuration
S.H. Godbole, Bombay	Our Rural Configuration
V.K. Bakre, Bombay	The Rural Configuration
Jaqueline Tyrwhitt, Canada	The Village Centre

There were in addition a series of reports by the Government of India concerned with their own programmes and activities in this field.

3. The first three published papers covered roughly the same material from slightly different points of view. Problems outlined in these papers were summarized as follows:

a. Community life hardly exists in the typical village.

b. Agriculture is the main source of employment. Because of the absence of inadequate irrigation, production is year after year subject to the variable monsoons.

c. Even when the weather is favourable, income from agriculture is seldom enough to provide for basic needs.
Because of the fragmentation of agricultural land, a farmer may have a 5-acre farm in two or more separate plots.

d. There is unemployment or under-employment during a large part of the year.

e. There is a large movement of population from the villages to the urban centres.

f. The water supply for both irrigation and domestic use is absolutely inadequate in quantity and quality.

g. Housing conditions are deplorable. The typical hut in North and Central India is a mud structure without windows, covered with thatch or mud and with dirt floor. Usually there is no separate shed provided for the cattle with all its consequences on the health of the family.

h. The traditional bullock cart is the most common means of transportation.

i. Roads are available only during good weather.

j. Cow dung is the traditional source of fuel.

International Federation for Housing and Town Planning... THE RURAL CONFIGURATION SESSION. -2

k. There may be a grocery store for daily needs but for all other purposes the villager must go to the district centre.

4. Measures suggested to improve the village situation and finally to solve its problems were:

a. Improve agriculture by providing wells and irrigation schemes.

b. Improve health by providing pure water supply for domestic use.

c. Promote small scale cottage industries to help and reduce unemployment and increase income.

d. As to housing, give demonstrations on improved houses built in the traditional way, (sample house) using local materials. The standard house should include 2 rooms with a cooking verandah and a separate shed for cattle. Ventilation openings or windows must be provided.

e. Discourage building houses at random. They should be laid out on proper town planning principles. Redistribute village sites so that each family will have space for the house, garden and cattle shed.

f. For every group of 8-10 villages a small district town should be contemplated with such services and facilities as schools, open market place, medical treatment, community centre, recreation facilities, co-operative bank, child welfare centre.

g. Organize a Panchayat to look after public works in towns and villages.

5. The paper submitted by Professor Tyrwhitt described comprehensively a model village centre constructed as part of the Low-cost Housing Exhibition. Surrounded by six experimental houses designed for self-help construction, the primary emphasis of the centre is on community facilities practicable for the average village of India. A variety of construction methods is possible. The functions of the village centre was considered in the following manner:

a. The mind. The school building is given a place of honor, and it is not to be overcome by industries.

b. The body. The Health Centre, or rather a preliminary step in that direction, provides a village nurse or trained mid-wife and clinic facilities visited periodically by a doctor. Concern about public health also involved the provision of pure water supply through wells of good design and the economic disposal of wastes.

c. The hands. The loss of handicrafts in Indian villages is considered a "tragedy" and provision is made for pottery, blacksmith, carpentry, and weaving shops--as well as for the village builder.

d. The spirit. Rather than a temple, mosque or chapel, the Exhibition Village Centre has a replica of the simple hut of Ghandi, who was himself so concerned with the revival of village life in India.

International Federation for Housing and Town Planning. THE RURAL CONFIGURATION SESSION. -3

6. During the discussion session, Professor Tyrwhitt emphasized that this particular project was simply a visual expression of ideas developed by the Community Projects Administration of India as interpreted by United Nations Agencies. Her own idea of the elemental importance of the Panchayat "as the kernel" was stated. Differences between the situation in Western Europe and South East Asia were brought out, as well as the consequent necessity to avoid disrupting the constructive qualities of village life.

Doxiadis, C.A. COMMENTS ON LAND USE CONTROLS AND PLANNING IMPLEMENTATION. International Federation for Housing and Town Planning. Proceedings of the SOUTHEAST ASIA REGIONAL CONFERENCE, New Delhi, February 1-7, 1954. Government of India Press, 1957. pp. 427-428.
711.16 (100)

1. These comments were delivered during the discussion period on the Implementation of Planning. Prior discussion reviewing planning legislation in India (through papers prepared for the conference), had been presented by Jean Canaux, together with his impressions, and Charles Abrams and Lional Brett, among others, had brought up several aspects of the British planning system as applied to this legislation.

2. ..."One of the points that has so often been mentioned is about controls. There is no question that the dream of the planner is public ownership of land. Failing that, he dreams of all the possible controls for the implementation of his plans. But, let us not be very hasty when we speak about the English controls. There is too much talk here about the English legislation. I am one of the first to admire it. But, this does not mean that we can follow it everywhere and in every case. There are certain reasons for which England has come to the conclusions and passed the present legislation. The density of population, the bigger industrialisation and the high level of culture are reasons for which England has reached this stage. Are we sure when we mention English legislation and schemes and present them as an ideal for all the other countries, that the countries are ripe enough to consider this legislation and try to imitate it and impose so many controls."

3. ..."Land control as a desire is one thing, and land control in practice is a completely different thing. Let us not forget that the control can only be increased with the ripeness of the country as a whole for this control. Administration must be of the proper level, and the understanding of the people must be colossal, as many people are required all over the country both inside the Adminiatration and out of it to implement the control of land use. It was a Czech I think that said that although every generation of us is learning a lot, our children have to start from the beginning. We have to pass through the same stages with every generation, from generation to generation. Children have to start always from the alphabet. Only then can they reach higher stages much more than the previous generation."

4. ..."The same applies to peoples. We cannot jump immediately to the higher level of planning that has been reached by the countries with much greater experience. On the other hand, we cannot say that we will require the 200 years that England, for example, has required to reach this stage. We may be able to cover the same distance in 50 years instead of 200--or in 30 or 35 years, but certainly, we cannot eliminate completely the intermediate stages. If we think of these examples, we will understand that our problem is not how to imitate the more advanced countries--and I am speaking also with experience of and in the name of, I think on this occasion, my own country (Greece)--but how to study the problem of land use and land development which in every phase is going to be balanced with the abilities of our country to implement it."

5. ..."Have we enough planners to conceive and implement such programmes? Have we the administrative machinery that is both morally and from the point of view of knowledge and technical experience, able to implement such plans? Have we the understanding of our people, if we live in a democrecy and have to ask for their votes? These are basic questions. And permit me to finish with an appeal for a balanced development of programmes in land use balanced with all the abilities of the country as a whole."

D.I.J.M.Q.

Karan, Pradyumna Prasad. The PATTERN OF INDIAN TOWNS: a study in urban morphology. Journal of the American Institute of Planners, Vol. XXIII: No. 2. November 1957. pp. 70-75. (Illustrations)
711.41 (540)

1. This is an attempt by Mr. Karan, who is in the Department of Geography, University of Kentucky, to fill a gap in geographical studies with a study of Urban Morphology in a South Asian setting.

2. Urban development in India generally goes far back in history, and the basis for founding was often the defensible site on a river bank. For defense, housing was clustered tightly. Some ancient towns such as Benares and Allahabad, located on the bank of the Ganges, have great religious importance. Some new cities have come into being during the past fifty years and are quite different in function as well as appearance.

3. Functional zones of cities include in many towns the chauk or central commercial area, which includes a market. Surrounding this area is a general residential area with scattered shops and small markets. Industry is not distinctly placed, but generally the newer industries locate on the outskirts. Quite apart are the sypes of settlement created during the British period. These are the 'Civil Lines' which are administrative and residential areas. Of brick construction, these do not fit well with the older parts of the cities. The railway colony with its offices and quarters for employees are on the side of the railroad away from the center of the city. The military cantonments built next to the older parts of the city are distinct functionally and morphologically, having generally rectangular lay-out. "As a result of the fragmentary remains of past cultures and a partial superimposition of modern aspects and the gross economic inequalities of the inhabitants, Indian towns are complex, functionally and morphologically."

4. In analysis of maps showing patterns of 832 cities and towns of Northern India, six well marked types of development were found: elongated, triangular, circular, semi-circular, rectangular and irregular.

5. Elongated towns made up more than one fourth of the sample. The role of rivers and roads in these patterns is cited. Apart from early protection, riverside sites provided the advantages of water supply, transport and commerce. Rivers have special religious importance in India. Lack of high ground, in Northern India, except along the edge of the Ganges flood plain, encourages elongation. Ghazipur, Patna, Lucknow, Kanpur, Moradabad, Mathura and other are riverside elongated towns. The unusual importance of a single road also promotes linear growth. Such are sometimes called 'street towns' and are found mainly in Northern Bihar, Uttar Pradesh and Punjab. Some are found at the base of the Himalayas and the Vindhayan plateau, where road traffic gives way to pack-bullocks. Towns in the Himalayan region including Mussoorie, Rakikhet and Almore are elongated because of location on upper slopes of long narrow ridges--having summertime cooling, transport and view as advantages.

6. Triangular towns are the next most numerous form in Northern India. "This form is related to some restrictive forces in the site, or to the convergence of roads, or to a road crossing a river." In Dehra Dun, the built up area is confined to the triangular plateau cut by the Bindai and Rispana streams. In other cities such as Hathras, the convergence of roads seems to explain the triangular form. Mirzapur, on the banks of the Ganges, gets its triangularity from the junction of the important Calcutta road with the river.

Karan, Pradyumna Prasad. THE PATTERN OF INDIAN TOWNS: A STUDY IN URBAN MORPHOLOGY.

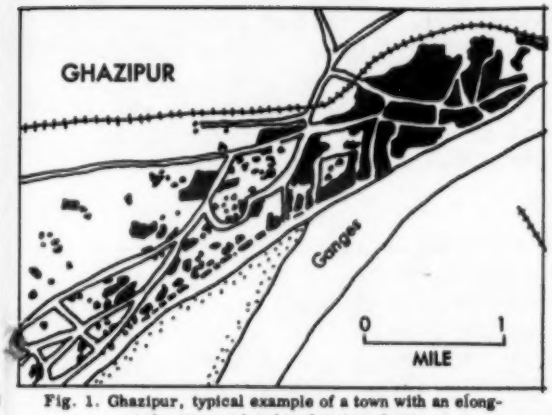


Fig. 1. Ghazipur, typical example of a town with an elongated pattern related to the river front.

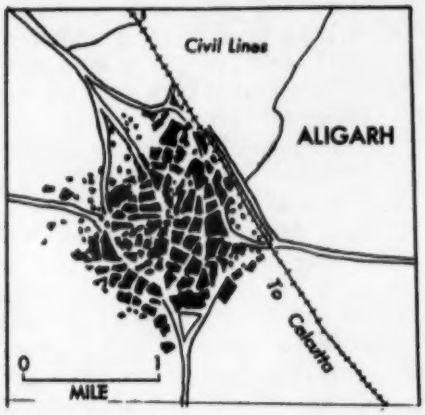


Fig. 6. Aligarh, a circular urban growth due to development around the central fort (now in ruins) and a market. It is a striking example of a round town with a relatively radial street pattern.

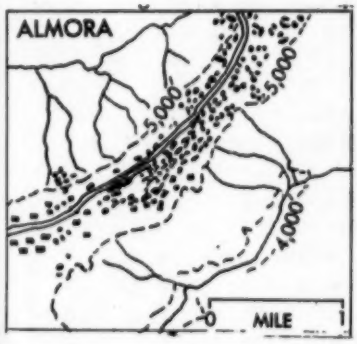


Fig. 3. Almora, typical example of a town elongated because of a narrow ridge-top location in the Himalayas.

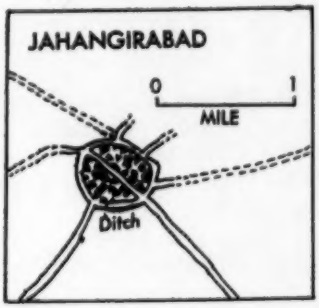


Fig. 7. Jahangirabad, Bulandshahr district, typical example of a circular town which was surrounded by a mud wall with ditch all round

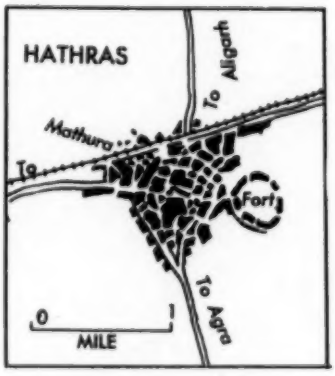


Fig. 4. Hathras, an example of triangular urban growth due to convergence of roads.

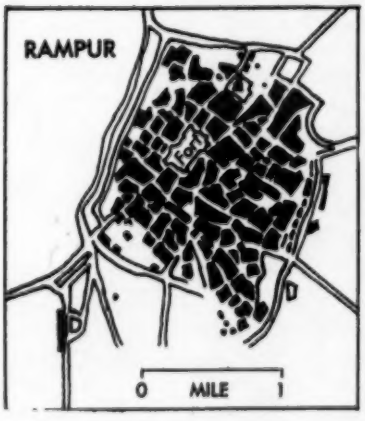


Fig. 8. Rampur is an example of rectangular urban pattern due to growth round the large rectangle fort. It is typical example of town where 'cultural' factors have determined the plan.

Karan, Pradyumna Prasad. The PATTERN OF INDIAN TOWNS -2

7. Circular towns or those having rounded shapes are next in order of frequency. The street pattern of such towns is generally radial, converging in the central area of commerce and cultural activities. Those with fortifying walls show considerable regional concentration in the upper Ganges Valley, called the "great passageway" with disturbed history and need for defense. Rounded cities not having walls often owe this form to growth around the central fort and market: (200 or more of the urban settlements in the Ganges Valley have had forts. Aligarh is an example of this type. Jahangirabad, on the other hand, had a wall and ditch all around it. The wall has disappeared; but the ditch has become a circumferential town drain.

8. Rectangular towns, which make up a comparatively small number of the towns examined, may be related to "a rectangular fort or rectangular fortifying wall, or a natural growth on crossroads." The form of Rampur accordingly appears to be caused by a large rectangular fort lying in the center of the city, with all main streets and built up areas parallel to the walls of the fort. Philibhit's rectangular shape can be traced to its being surrounded by a rectangular wall in the 18th century. Jalalabab similarly owes its street pattern as well as the overall town form to the shape of its external wall. Ballia, on the other hand, was planned as a rectangular city, following the destruction of older Ballia by the shifting course of the Ganges, in 1877. The planned new town was "an elongated quadrangle," but the stream shifted again in 1904. The rectangular chauk (commercial core) has moulded subsequent growth.

9. A criticism of the ultimate value of such morphological description is the fact that almost half of the towns examined defied classification into any of these classes and were therefore 'irregular'. These towns however were usually small and most of India's large towns fell into one or other of the five categories. "Historical vicissitudes, distribution of firm or loose soil, or low-lying or raised land in the site, the unequal pull of various roads, according to the commercial connection of the town to the surrounding areas, the position of the railway station and the administrative section and the location of the market places are factors which appear to have contributed in varying degrees to the irregular form of towns."

Szulc, Tad. BRAZIL BUILDS A NEW CAPITAL. New York Times Magazine, November 10, 1957. pp. 46-56. (Illustrations).
711.432 (81)

1. This is a presentation of information concerning the new capital of Brazil, called Brasilia, which is already under construction. Mr. Szulc is a New York Times correspondent having Brazil as the center of his activities.

2. Soon after Brazil separated from Portugal it was suggested that the capital be moved to the inland region now called Goias and that it be named Brasilia. And all constitutions from 1891 to 1946 have provided for this moving, but not until Dr. Juscelino Kubitschek was elected president last year did any definite action begin.

3. There are two main reasons for moving the capital to the new site. The first is concerned with "geo-economics." The rapidly growing population needs to push inland to the vast undeveloped regions of the country. The interior location of the plateau site of the new city is expected to stimulate such migration as well as economic activity. The second reason has to do with freeing the national government from the influence of Rio de Janeiro, including cronic deficits, localism, and a complex of political corruption. The cooler climate of Brasilia's location is another consideration.

4. Brasilia's planners, Lucio Costa, the winner among twenty-two entries in a pilot plan contest, and Oscar Niemeyer, who has designed all public buildings and is in charge of architectural aspects, work together in this unlimited-expense operation. Mr. Niemeyer's conception of the Presidents's Residential Palace "is a striking two-story structure resting on twenty-two arched concrete columns in a flowing design." The city itself will be bordered on three sides by a lake created from the construction of a dam which will also provide hydroelectric power to the region. (This is to be financed by $7,000,000 of a $10,000,000 loan from the United States.) Brasilia will be a "cross-shaped garden city" with a population of about 500,000. Apart from the presidential palace, legislation and administrative buildings, considerable residential development is planned. A 180-apartment Government hotel, 66 six-story apartment buildings and 500 ranch-type houses for Government employees are being constructed. The Residential Axis, 7.5 miles long and 523 feet wide, will be composed of apartment buildings plus related clusters and individual houses (at least one block separated from the Axis), alternating with gardens. This Residential Axis will intersect with the City's great Monumental Axis, an avenue 5 miles long and 820 feet wide, which will lead to the Plaza of the Three Powers. This Plaza will be triangular, with sides nearly 3000 feet long. A huge concrete platform (plaza and bus station) flanked by buildings slated for business will rise over the intersection of the two main axes. Airport facilities have already been provided, and highways are under construction; but a projected railroad raises serious economic doubts--as do several other aspects of the project.

5. A great deal of construction work has already been completed at Brasilia; and it is felt that this time things have really gone too far to be abandoned by political whim. Some parts are slated for occupancy next May, and the final deadline for the government change is legislated for 1960.

D.N.O.

Page, J.K. CLIMATE AND TOWN PLANNING WITH SPECIAL REFERENCE TO HOT CLIMATES. Town and Country Planning Summer School, (Overseas Section) Oxford, England. September 7-11, 1957. (Tables & Diagrams).
551 (213,25)

This article was announced in HIB-GA 26, November issue, page 91.

1. The following abstract is taken from a talk by Mr. Page at the Summer School. The paper is largely based on work the speaker carried out in the Colonial Liaison Section at the Building Research Station, Watford. Work was done in conjunction with the Colonial Meteorological Services and the Climatological Branch of the British Meteorological Office.

2. To discuss the relation of climate and town planning, it must be understood that the town itself has an effect on climate. Also some of the complexities of microclimatology must be understood.

3. Among the three aspects of desirable environment for human welfare: health, safety and comfort, it is thought that priority must be given to safety. The most important climatic hazards are: high winds of hurricane force, tornados, tidal waves, floods and earthquakes. Each has its special implications for planning, especially in the siting of such public buildings as hospitals. Present implications of climatic factors to public health have to do with insect breeding places and public water supply.

4. Climate and comfort may be considered for each of the senses, but conflicts can occur between comfort for the different senses. Thermal comfort consists of air temperature plus relative humidity and air movement ('the effective temperature scale') modified by effects of radiation ('corrected effective temperature scale'). Even slight air movement has a marked effect on comfort in hot climates. Thus "the primary thermal objective in humid areas is to keep the wind circulating. It is also desireable to use light-weight structures so that buildings cool quickly at night." Evaporation is not the problem in desert areas; and "the primary thermal objectives in hot dry areas are to provide shade and to keep the air temperature down." Heavy buildings of high heat capacity, spaced closely for mutual shading are suggested. The avoidance of desert winds may well be a planning objective, and recognition must be taken of the cold nights. Monsoon climates find the compact layout of desert towns unsuitable; however, heavy buildings, proper shading, and the courtyard plan have advantages. Upland climates with a daily high temperature swing need shading during the day and interior warmth at night. Visual comfort varies from hot dry climates where ground glare is bad to hot humid areas where sky-glare is worse. Olfactory comfort and air pollution are often over-simplified by planners. For example the direction of wind during temperature inversion may be more important than prevailing wind in the determination of air pollution. Acoustical comfort in hot areas is complicated by the need for open buildings. Climate acts on vegetation to effect the appearance ot towns.

5. The implications of climate on the orientation of buildings is divided as follows:

a. Solar heat gains to buildings
b. Shading (1) the building itself
(2) the surrounding terrain
c. The relative importance of air movement and its relation to wind direction.

Page, J.K. CLIMATE AND TOWN PLANNING WITH SPECIAL REFERENCE TO HOT CLIMATES.

TABLE 1

Effective temperatures for different combinations of air temperature, relative humidity and rate of air movement.—Lightly clothed subjects (uncorrected for radiation)

Shade dry bulb temp. °F	Relative humidity	Effective temperature °F		
		Air movement 20 f.p.m.	Air movement 100 f.p.m.	Air movement 500 f.p.m.
105	75% 40% 20%	98 91 87	98 90 86	97 88·5 84·5
95	90% 75% 40%	93 89·5 84	92 88·5 83	90 86 80·5
85	90% 75% 40%	83·5 81 76	82 80 75	78 76 72

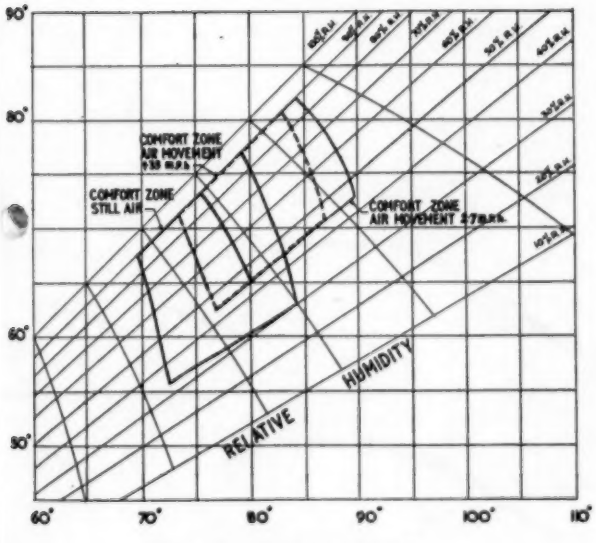
ecommended range of effective temperatures for comfort in air-conditioned buildings 74° F. (78–80° F. Dry bulb, relative humidity 50%).

TABLE 2

*Effect of orientation on total daily short wave heat radiation received on vertical surfaces from the sun, sky, and ground on cloudless days, latitude 10° N., together with peak direct solar intensities.** Units B.T.U./sq. ft. day and B.T.U./sq. ft. hr. (peak intensities on vertical surfaces).

Orientation	Summer Solstice			Equinox			Winter Solstice			Annual Aver.	
	Direct	Total	Peak direct intensity	Direct	Total	Peak direct intensity	Direct	Total	Peak direct intensity	Direct	Total
N	690	1090	70	0	410	0	0	320	0	150	520
S	0	400	0	430	840	53	1220	1540	163	480	850
E or W	640	1040	165	700	1110	195	450	770	153	630	100
Ratio (E+W) to (N+S)	1·85	1·30		3·25	1·80		·74	·83		2·0	1·46

* (Ground reflectance assumed to be 20%, and radiation from sky uniform thermal climate.)



URE I. The dry bulb temperature, the humidity of the air and the rate of air move- it will effect comfort. This diagram shows the large upward shift of the comfort e produced by slight air movement. (Based on studies of Kip and Courtice in the East Indies [6])

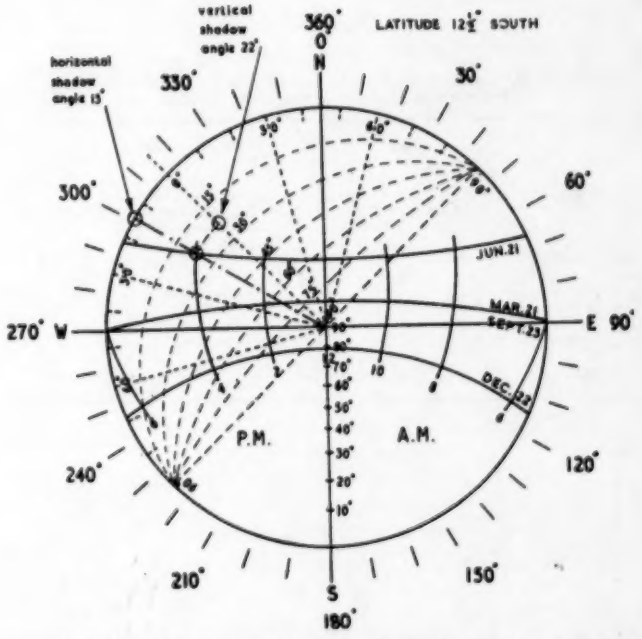


FIGURE 2. Problem of shading can be handled on the drawing board by using suitable solar charts with a shadow angle protector laid over the top. The paths of the sun are represented by the solid lines running across the diagram. The vertical lines indicate the time. Thus at 4 p.m. on 21st June the vertical shadow angle on a N.W. façade at 12½° S is 22° and the horizontal shadow angle 13°. These angles are used for setting out the shadows (Based on forthcoming publication by J. K. Page [14]).

Page, J.K. CLIMATE AND TOWN PLANNING WITH SPECIAL REFERENCE TO HOT CLIMATES.

TABLE 3

Temperatures above an asphalt street, °F, after G. S. Eaton[38]

	8 a.m.	10 a.m.	12 a.m.	2 p.m.	4 p.m.	6 p.m.	8 p.m.
Surface of street	86	101	118	125	122	112	99
30 cm	85	95	102	106	106	103	88
120 cm	85	92	100	104	105	100	87
Beside street	82	90	93	98	99	95	85

TABLE 4

Horizontal temperature pattern characteristics of three American cities after Duckworth and Sandberg[80]

	San Francisco	San Jose	Palo Alto
Population	784,000	101,000	33,000
Incorporated land area: sq. miles	45·1	14·8	8·6
Population density: persons/sq. mile	17,383	6,824	3,837
Representative urban differential between city centre and countryside during evening* (2000–2400 hrs.)	10–12°F	7–9°F	4–6°F
Representative size of area at least 4°F hotter than surrounding countryside: sq. mile	4·0–6·0	1·5–2·0	0·1–[illegible]
Max. observed urban differential between city centre and countryside	20°F	14°F	13°F

* Time of maximum difference.

TABLE 5

Variation of wind speed with height during one day over Fort Clayton Golf Course, Panama after Hayles[39] Units. Miles per hour.

Height	DAY		NIGHT		DAY	
	Sun shining	Sun shining	Clear	Clear	Clear	Cloudy
	1150 hrs.	1656 hrs.	2039 hrs.	0215 hrs.	0643 hrs.	0951 hrs.
5 ft.	5·7	4·2	6·0	4·5	3·0	8·2
20 ft.	6·7	4·8	9·4	6·8	5·0	9·0
40 ft.	5·3	5·0	10·2	7·6	6·3	9·0

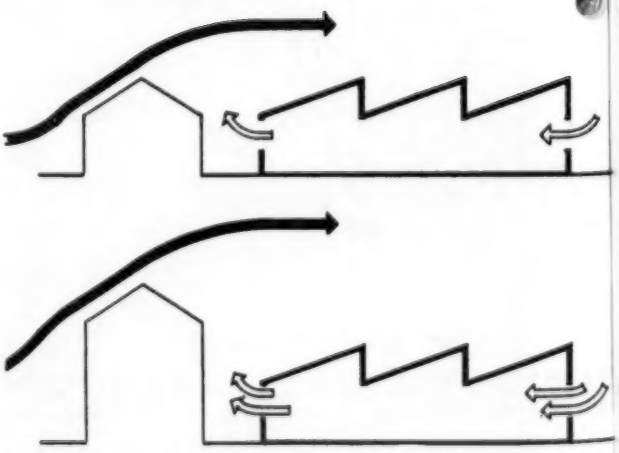


FIGURE 3. The pattern of air flow through buildings must be determined by observation and not by speculation. Obstructing buildings may make the air move in the opposite direction to the free wind. Better ventilation may result from obstruction by a high building (bottom) due to the more intense zone of low pressure in its lee, than by a low building (above). (Based on E. T. Weston's studies.[88])

d. Cost of controlling soil erosion and providing surface water drainage.
e. Cost of excavation of foundations, particularly on slopes.

In general it is felt that the long axis of buildings should run east-west whenever possible on level sites unless buildings are close enough together to provide mutual shading on the east and west sides. West orientation is the worst, especially if the site overlooks water. On sharply sloped sites, contour planning is necessary over all other considerations. Air circulation is important but is not necessarily promoted by orienting all building across the wind.

6. The climate of towns is considered from the microclimatological point of view. Vertical variations of temperature within the town depend on presence of overcast conditions, nature of surface materials, relation of winds; topography, artificial heat producers (including air conditioner exhaust). More interesting, however, are the horizontal variations in temperature. A study by Duckworth and Sandberg on temperature variation in three California (USA) cities is especially important to town planning. Variation between downtown areas and outlying areas was found to be a function of city size, time of year, time of day, etc. Patterns of wind flow may be even more complex than temperatures. Topographical and building wind shadow must be considered. E.T. Weston, for example, has shown that a high industrial building shielding another low building from direct wind may actually promote better wind flow than would a low building. The stagnant zone from wind shadow must be considered. Roof pitch and over-hang can influence the height of this stagnant zone.

7. The speaker expressed his own conviction that it is not sound for planning to operate without the support of proper research organization. The vastness of still unsolved problems, even in this field, indicates the need.

N.O.

Scott, Phyllis M. and Hodge, Peter. UNIVERSITY TRAINING FOR COMMUNITY DEVELOPMENT IN GHANA. Community Development Bulletin, June, 1957. (Vol. VIII, No. 3) pp. 56-65.
378.4 (61)

1. This article is mainly a description of the Certificate Course in Social Studies, given at the University College of Ghana. The course was started only in January 1956 and is still in the experimental stages. It is said to be the first such experiment in Africa.

2. The comprehensive approach to social welfare is taken rather than concentration on rural or urban aspects of the work. It is held that "there is a body of fundamental principles common to all welfare work with people whether the work is being undertaken with large groups at the level of community development or with small groups at the level of the family."

3. The social context within which problems of development arise is stressed. It is hoped that resistances due to "an inadequate use of the sociological and anthropological knowledge of the community" will so be minimised.

4. Students reading for the Certificate Course are all mature people, having a range of social work or teaching experience from five to nineteen years. Present government regulations insist on a university degree for entry into government service, and most of the students are already in such service. For such students the Certificate Course is a means to promotion within their departments. For others, however, the degree ruling is felt to be unfair; and it is hoped that it will be removed.

5. The Course, under the general direction of the Professor of Sociology, is a "two-year professional non-graduating one." Qualifications for admission are university entrance; a good general education plus five or more years' social work experience; or, for mature students, suitability and ability to profit by the course. A residence of six college terms and a minimum of six months in the field is required of the student involved in the course. A more specialized degree course in Social Administration (following the University of London, School of Sociology) for graduates of the certificate course is being contemplated. It is felt that more study on the term "community development" is needed for application to new projects in underdeveloped areas.

6. Subjects covered in the Certificate Course in Social Studies (the core of any future Social Administration degree syllabus) are given as follows:

a. Social Administration: Development and structure of the social service, principles and methods of social work, administration and community organization, and problems of policy in the welfare field.

b. Study of Society: Social organization, customs, rules of African societies, effects of Western culture and technology.

c. Political and Administrative Institutions: Outline of the constitutions of Britain and Ghana, political organization of Commonwealth and other nations, development of policy law in West Africa in relation to social services and local government.

Scott, Phyllis M. and Hodge, Peter. UNIVERSITY TRAINING FOR COMMUNITY DEVELOPMENT IN GHANA. -2

d. Social Economics: Analytical and applied economics, the relation of economic structure to various factors, determination of price mechanism, industrial location, cost of living, per capita income, etc.

e. Social Psychology: Social development, age-group behavior, culture patterns and personality, group membership, harmony and conflict, morale and leadership, group attitudes and social change, propaganda.

f. Social Philosophy: Fundamental moral concepts, ethics and problems and social relations, culture contact and value systems, the idealogical vs. the real.

7. Field work is to be integrated with this theoretical study. Also, however, it is through practice that the student will come to see the relation between various theoretical topics. The student is placed in a different department of government work than his usual one for the field stage.

8. The projected Diploma Course will be made up of a continuation of the basic syllabus outlined plus options. Options such as Industrial Welfare, Rural Community Development, Urban Community Development, Group-work and Casework are envisioned, and other "related subjects" are being sought.

9. Difficulties are found in the exploratory and necessarily trial and error nature of the course. Also certain language difficulties appear, especially for the Mass Education Officer (rural worker). Finally, there exists a serious shortage of textbooks on several aspects of the course. Associated with this is the need for more teaching and research personnel. Much of the subject matter needs to be modified to apply to the African setting. The need for more research is especially critical in the determination of best training of community development workers in underdeveloped areas.

GENERAL

P.W.

Housing and Home Finance Agency. International Housing Service. CORRECTION ON INFLATION. News Notes, September 1957. p. 5.
33 (100)

1. This statement points up a qualification in older income theory (see 2. below) Orientation in Housing Economics, Finance, and Market Analysis, Part I--Significance of Housing in Economic Development, HHFA Processed 1956, last paragraph, page 4.) The qualification is derived from (see 3. below) W.M. Scammell, (International Monetary Policy, Macmillan & Co. 1957, page 46).

the following quotations are extracted.

2. "If the economy is not operating at full employment, loans to builders may permit hiring of unused labor and resources. The increased deposits are offset by increased real output and the transactions related thereto. The immediate influence would not be inflationary but neutral.

3. The assumption, which is made in in income theory, that, up to the level of full employment, prices in the economy do not rise is not true in practice. Scarcities and bottlenecks in the supply of both goods and factors cause prices to move upwards long beofre full employment is reached and there is still great need to consider the effect of price changes on the foreign balance and what reactions upon the income process these may have..."

N

King, Seth S. Scientists in Israel Start a SEARCH FOR MEANS OF LIVING IN NEGEV DESERT. The New York Times, Sunday, November 10, 1957. p.3.
71 (56)

1. This is a report on scientific activities in the determination of possible means of human life in the desert. For earlier background on this project see HIB-GA 23, page 321. The following is quoted in full.

2. (Beersheba, Israel, November 1.)
The vanguard of scientists who hope to pry loose some of the secrets of desert living have begun their preliminary work.

3. The Negev Research Institute, an establishment that could mean a great deal in Israel's future, was formally opened here this week.

4. The institute was created by the Government of Israel and is being directed by the nation's Research Council. It is also receiving funds from the United Nations Educational Scientific and Cultural Organization.

5. In its connection with the latter, the institute will supply information from its experiments to UNESCO's arid zone research committee.

6. Part of the institute's efforts will be aimed at finding how best to feed, clothe and house people who must live and work in a severe desert climate.

7. Two teams of botanists from the Hebrew University have started studies of Negev plant life. A group of physiologists from the university are scheduled to begin experiments on the physical effects of hot climates, with units of the Israeli Army serving as the subjects.

8. A meteorological station has been established on the institute grounds for special weather studies.

9. In another field, Research Council scientists will continue their experiments in the desalination of brackish ground water. Another group will work with devices for exploiting solar energy.

10. The institute is now housed in one laboratory building and in three other structures that will eventually serve other uses.

11. Eventually, if the funds can be found, the institute will have four permanent laboratory and administration buildings, plus a number of service buildings.

D.P.W.

Meyer, A.J. with Jaffar, Dhia and Chelabi, Abdul. DEVELOPMENT IN IRAQ: Discussion in Seminars on Middle East directed by A.J. Meyer, Harvard University, October 1957.
711.12 (56)

1. The following notes have been developed from statements made by A.J. Meyer, Dhia Jaffar (first Minister of Development for Iraq) and Abdul Chelabi (present Minister of Development) in two successive seminar discussions.

2. The situation in Iraq was contrasted with that in Pakistan. Iraq in such a comparison has: underpopulation rather than over-population; too much rather than too little foreign exchange; a fairly homogeneous Arabic-speaking populations; and, due to the completion of two major irrigation schemes, less dependence on weather. Both countries are Moslem, eat mainly wheat and rice, have water problems; and both have a fairly good civil service, with a landlord-merchant group western educated.

3. Unique features of the situation in Iraq include its outstanding position in the Middle East in terms of drive, capital and resources. Oil royalties have been significant only since 1950, though oil production began in the early thirties. The $200 million per annum income can easily rise to $300 million. Since 1950 70% of this income has been earmarked for the Development Fund. In 1953 the Ministry of Development was created to organize the integration of activities.

4. The 1956 Programme plans to invest some 500 million dinars up to 1960 as follows:

Administration			7 million dinars
Flood control, irrigation, drainage			153
Transportation:	Roads	63	
	Bridges	22	
	Airports	8	
	Railways	24	
	Port facilities	4	121
Health			9
Education			6
Public Buildings			20
Summer Resorts			2
Housing			24
Industry & Mining			67
Underground water & Agriculture			14
Minor projects			77
			500 million dinars

This will mean investing 100 million dinars per annum, equivalent to $45 per capita each year.

5. The two major dams cost 25 million to install, but as much as this had been spent annually on flood damage.

6. It was said that Iraq needs 300,000 houses, at a total cost of $300 million. In this direction, three Building Schools have been started at Mosul (Austrian-administered), at Baghdad (Greed-administered), and at Basrah (Italian-administered).

Meyer, A.J. with Jaffar, Dhia and Chalabi, Abdul. DEVELOPMENT IN IRAQ -2

7. In education, the major emphasis is on primary education and a serious teacher shortage exists. Teachers are imported from Syria and Lebanon, and skilled technicians are stil sent abroad for education.

8. Iraq has had almost no industries, except for its oil production and export of dates. Industries based on petro-chemicals are in prospect. In the absence of private capital, it is necessary for the government to "prime the pump" for such industries. The hope is to sell the plants once workability is proved. Industries are made independent of the Development Board. Industries set up so far are for internal consumption except for the fertilizer plant in Basrah which uses waste natural gas.

9. The land situation was reviewed. In Moslem law, the individual only has right to the use of the land, not to outright "ownership." This system, whereby the government was the ultimate owner of all land, was weakened after the first world war when registration of title was required. Registration of title to use land became interpreted as registration of freehold. This affected 20% of the land of Iraq, and these "landlords" are powerful men and occupy some 80% of the seats in Parliament. But, since communications around the country have been revolutionized by the introduction of public radios (Iraq is mainly illiterate), the government has been able to pressure them to vote social measures as "good citizens," including bills to enable the government to re-distribute land in holdings over a certain size. Other forces operating to induce the compliance of this landlord group are the alternative opportunities of accumulating wealth now open to them.

10. In 1946 the small holding project was introduced whereby farms of 60 acres were allocated by the Government from unused land. Since 1952 no land can be distributed except in small holdings to the landless on a basis of land productivity - e.g. 100 units (50 meters x 50 meters) of irrigated land is considered equivalent to 400 units of mountain pasture. The settlers have been tribesmen, and this has tended to diminish the ferocity of some tribal feuds: since all have now become government men.

11. The national income in Iraq has almost doubled since 1951. The wage of skilled labor has gone up to surpass that of the young lawyer. Inflation is checked by the uncontrolled import of consumer goods against the large foreign exchange situation.

D

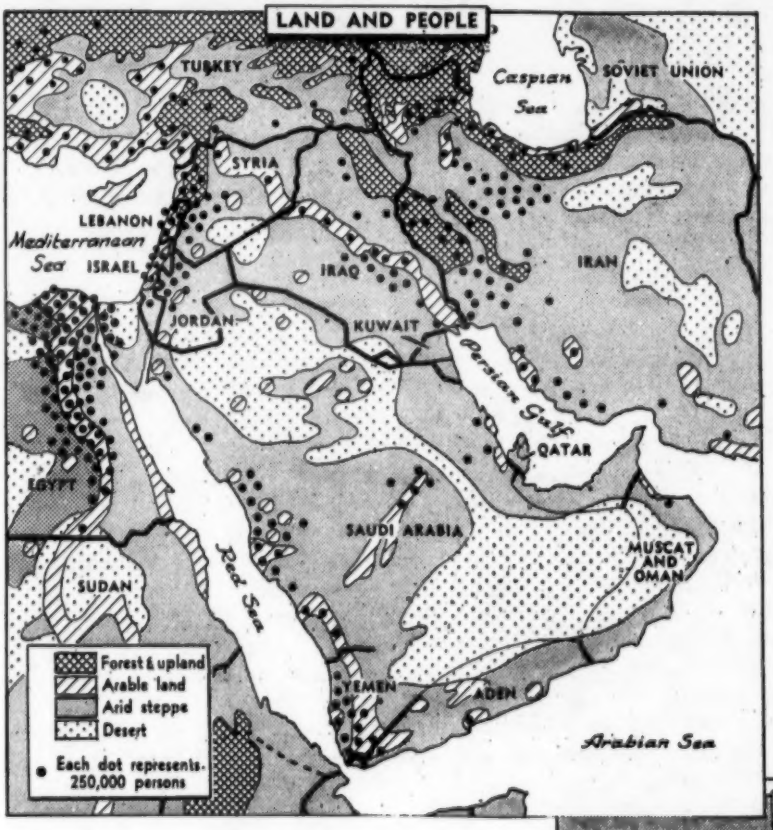
United Nations. Department of Economic and Social Affairs. THE AGING OF POPULATIONS AND ITS ECONOMIC AND SOCIAL IMPLICATIONS. Population Studies, No. 26. New York, 1956. p. 10. (ST/SOA/Series A/26).

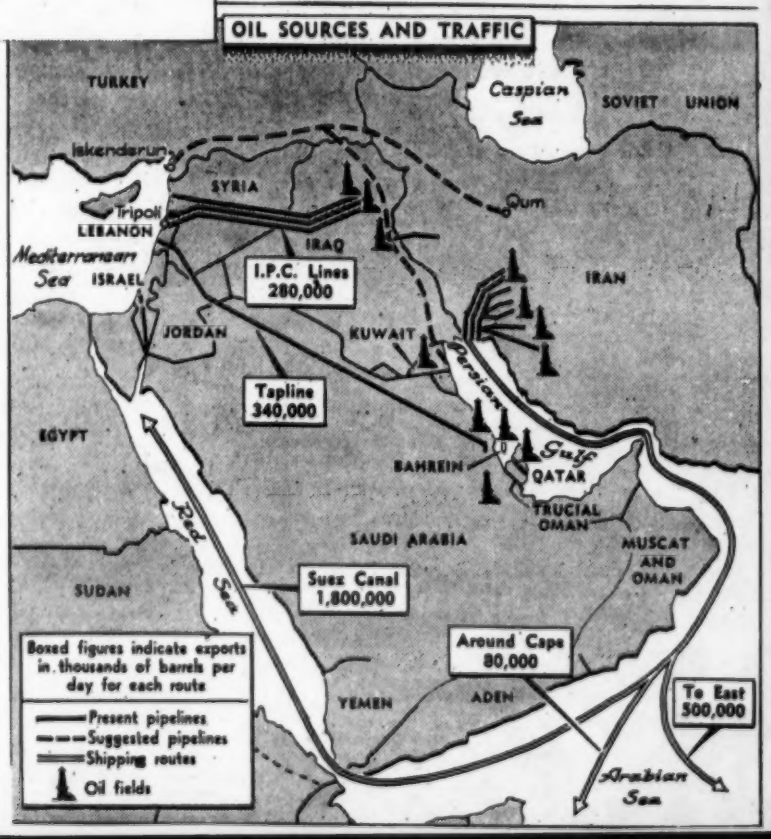
GRAPH 1

POPULATION IN 1950
• : 1 million inhabitants
o : Cities of more than 500,000 inhabitants (within the administrative boundary).
Made by Jacques Bertin for the International Commission for a Scientific and Cultural History of Mankind
Adapted from various yearbooks and from the 1951 Oxford Atlas.

D

The New York Times, Sunday, October 20, 1957, p. E5.





D.I.N.V.

United Nations, Economic and Social Council. World Economic Situation. INDUSTRIALIZATION IN EGYPT, ISRAEL AND TURKEY (part 1. Growth and Structure of Manufacturing Industry). E/3016, July 3, 1957.
711.12 (56,62)

1. This report, which is preliminary to a more complete one expected in 1958, has as its general objective the presentation of a "description of recent trends in industrialization and of the present-day structure of industry in the three countries." The more complete report will include "an analysis of returns to the factors of production in industry, as well as an examination of problems of cost and efficiency, and of the impact of industrialization on foreign trade and on the balance of payments of the respective countries."

General Trends

2. Thirty years of industrial development in the three countries is summarized. Although industry has increased in Egypt, Israel and Turkey, there has been variation between countries as to periods of accelerated development. In Egypt there was some expansion after 1930, which was greatly speeded during the Second World War followed by a decline and a recent gradual growth. Israel's industry began developing after the First World War, has steadily increased (especially during the Second World War), but the rate of growth has declined substantially since 1952. Beginning in the late 1920's, Turkish industry rose rapidly during the nineteen thirties, but halted during the war. Since 1945 the growth has resumed; and, during the past few years, it has accelerated. Factors affecting the growth of industry in all three were the world economic depression of the thirties and rising internal demand from population growth. In Israel and Turkey, the rise of per capita incomes has increased demand. Tariff protection (after the abolition of the capitulations in Egypt and Turkey and after 1948 in Israel) has further fostered industry.

Employment

3. The growth of industrial employment, as a relatively easily available measure of industrialization, is presented. The recruitment of employees from the general labour force is traced. These shifts have had a varied impact on employment in agriculture and other sectors of the economy. Egypt appears to have developed an increasing proportion of persons not involved in industry, trade or agriculture. The agricultural structure of Turkey has adjusted itself well, and Israel has recently pushed agriculture at the expense of industrialization. The flow of employment into various sizes of industries is examined, and it is seen that in Israel and Turkey the largest industries have grown most in terms of employment percentages. In Egypt and Turkey, on the other hand, most of the expansion took place in food processing, beverage, tobacco and textiles, while Israel increased relatively more in other fields. Small-scale establishments (employing less than ten persons) continue to play an important role in the manufacturing in all three countries. There has been some decline in their relative importance, but about 55% of the industrial labor force in Egypt and Turkey is employed in such establishments; and the figure is only 10% less for Israel.

United Nations, Economic and Social Council... INDUSTRIALIZATION IN EGYPT, ISRAEL AND TURKEY -2

Structural Characteristics

4. Mechanization, defined as motive power utilized per worker in industry, provides data which can be used for comparisons between countries. Despite data deficiencies, it is shown that Turkish industry is considerably more 'mechanized' than that of Egypt--except for food processing and chemical industries. The Turkish statistics, which provide the most reliable data, indicate that some of that country's industry compares well with West European manufacturing of similar nature. In examining capitalization, some serious weaknesses were found in the data; and measures of 'value added' were not especially satisfactory except for general comparisons. Relations between the structural characteristics of industry as a whole vis-a-vis selected industries were of interest: "it would be expected that size (employees per establishment), extent of mechanization (horsepower available) and capital intensity (capital investment per worker) would all move together as industrialization proceeds." For industry in general this relationship seemed to hold; but for specific industries, it failed.

Production and Marketing

5. Industrial output is analysed and (where possible classified by economic use. The bulk of large- and medium-scale manufacturing in Egypt, Turkey and (to a lesser degree) Israel produces non-durable consumer goods. In Israel at least, however, the durables and intermediate products are increasing their share of the total product. Seasonal industries, often dealing with agricultural perishables, are still very important in Egypt and Turkey.
Only in Israel are exports significant. While most of the industry in Egypt and Turkey was developed close to local raw materials, these two countries as well as Israel now import considerable amounts of raw materials.

Ownership, Legal and Location Patterns

6. While industry has been mainly privately owned in Egypt, it has entered into capital stimulation since 1953. In Israel the development of industry has been carried out by private enterprise--but with a substantial role being taken by the Histradrut, and some government activity in unusual cases. State initiative, under the cardinal principle of statism, has guided industrialization in Turkey; and, despite recent private activity, it is still very strong. Foreign investment has been affected by government policies, expecially in Egypt and Turkey. The corporate form of legal organization for industry has increased in all three countries; but is most widely-found in Egypt, probably because of the early establishment of a stock market. The location of industries has tended to concentrate in the largest cities, especially in Israel. The governments of Israel and Turkey have made attempts to effect a decentralization of industry, but these efforts have not been too successful. In Egypt it appears that some shift in industry has taken place away from Cairo and Alexandria. Governmental vs. private locational principles are described.

E K I S T I C S

HOUSING & PLANNING ABSTRACTS

CLASSIFICATION SYSTEM USED BY DOXIADIS ASSOCIATES

A The Problems

B The Policies

C The Programs

D People, Development, and Ekistics**
- Geographic factors
- Social factors
- Industry
- Agriculture
- Transportation

E Houses

F Structures
(exclusive of Houses)

G Community services
- Utilities and Social Services

H Regions

I Major urban centers

J Market towns
- Medium-sized and small towns
- New towns

K Villages
- Rural land

L Farms

M Surveys
- Census data
- Topographical surveys

N Research
(and Technical Education)

O Planning
(and Landscaping)

P Financing

Q Urban Land

R Labor

S Materials

T Construction
- Systems of Building and Costs

U Implementation

V Management

W Administration

X Legislation

**Refers to centers of activities in relation to their surrounding regions.